

LISTING OF THE CLAIMS:

Claims 1 to 23. (Canceled).

24. (Previously Presented) A solder alloy based on nickel, comprising at least the following elements:

chromium, cobalt, molybdenum and nickel; and

a combination of palladium, boron, and yttrium configured to set a melting range of the solder alloy in a range of from about 1200°C to about 1260°C.

25. (Previously Presented) The solder alloy according to claim 24, wherein the nickel is in a proportion of 63 to 86 wt.%, the chromium is in a proportion of 5 to 17 wt.%, the cobalt is in a proportion of 8 to 15 wt.%, and the molybdenum is in a proportion of 1 to 5 wt.%.

26. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy additionally includes aluminum.

27. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy additionally includes aluminum in a proportion of 2 to 8 wt.%.

28. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy additionally includes at least one of (a) tantalum in a proportion of 1 to 8 wt.% and (b) niobium in a proportion of 0.1 to 2 wt%.

29. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy includes palladium in a proportion of 0.5 to 5 wt.% and yttrium in a proportion of 0.1 to 1 wt%.

30. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy additionally includes at least one of (a) hafnium in a proportion of 1 to 5 wt.% and (b) silicon in a proportion of 0.1 to 1 wt%.

Claim 31. (Canceled).

32. (Previously Presented) The solder alloy according to claim 24, wherein the solder alloy includes boron in a proportion of 0.5 to 2.5 wt.%.

33. (Previously Presented) The solder alloy according to claim 24, wherein the chromium is in a proportion of 5 to 17 wt.%, the cobalt is in a proportion of 8 to 15 wt.% and the molybdenum is in a proportion of 1 to 5 wt.%;

wherein the solder alloy additionally includes aluminum in a proportion of 2 to 8 wt.%, tantalum in a proportion of 1 to 8 wt.%, niobium in a proportion of 0.1 to 2 wt.%, yttrium in a proportion of 0.1 to 1 wt.%, hafnium in a proportion of 1 to 5 wt.%, palladium in a proportion of 0.5 to 5 wt.%, boron in a proportion of 0.5 to 2.5 wt.% and silicon in a proportion of 0.1 to 1 wt.%; and

wherein the nickel is in a residual proportion such that a sum of the portions yields 100 wt.%.

34. (Previously Presented) The solder alloy according to claim 24, wherein the chromium is in a proportion of 9 to 11 wt.%, the cobalt is in a proportion of 9 to 11 wt.% and the molybdenum is in a proportion of 3.5 to 4.5 wt.%;

wherein the solder alloy additionally includes aluminum in a proportion of 3.5 to 4.5 wt.%, tantalum in a proportion of 1.5 to 2.5 wt.%, niobium in a proportion of 0.5 to 1.5 wt.%, yttrium in a proportion of 0.1 to 0.5 wt.%, hafnium in a proportion of 3.5 to 4.5 wt.%, palladium in a proportion of 3.5 to 4.5 wt.% and boron in a proportion of 1.5 to 2.0 wt.%; and

wherein the nickel is in a residual proportion such that a sum of the portions yields 100 wt.%.

35. (Withdrawn) A method, comprising:

repairing a component of a gas turbine of one of (a) an aircraft engine and (b) a stationary gas turbine with a solder alloy based on nickel, the solder alloy including:

at least the following elements: chromium, cobalt, molybdenum and nickel; and

a combination of palladium, boron, and yttrium configured to set a melting range of the solder alloy in a range of from about 1200°C to about 1260°C.

36. (Withdrawn) The method according to claim 35, wherein the component of the gas turbine includes a guide blade of the gas turbine.

37. (Withdrawn) A multi-component soldering system, comprising:
a solder alloy based on nickel, the solder alloy including:

at least the following elements: chromium, cobalt, molybdenum and nickel; and

a combination of palladium, boron, and yttrium configured to set a melting range of the solder alloy in a range of from about 1200°C to about 1260°C; and

at least one additive material, a melting range of the at least one additive material being above the melting point of the solder alloy.

38. (Withdrawn) The multi-component soldering system according to claim 37, wherein the additive material corresponds to one of (a) a nickel-based alloy and (a) a cobalt-based alloy.

39. (Withdrawn) The multi-component soldering system according to claim 37, wherein the additive material is nickel-based and includes, in addition to nickel, at least one of the following elements:

chromium in a proportion of up to 30 wt.%;

cobalt in a proportion of up to 20 wt.%;

tungsten in a proportion of up to 15 wt.%;

molybdenum in a proportion of up to 10 wt.%;

aluminum in a proportion of up to 10 wt.%;

tantalum in a proportion of up to 10 wt.%;

titanium in a proportion of up to 10 wt.%;

rhenium in a proportion of up to 10 wt.%;

iron in a proportion of up to 5 wt.%;

niobium in a proportion of up to 5 wt.%;

yttrium in a proportion of up to 5 wt.%;

hafnium in a proportion of up to 5 wt.%;

palladium (Pd) in a proportion of up to 5 wt.%;

carbon in a proportion of up to 1 wt.%;
zirconium in a proportion of up to 1 wt.%;
boron in a proportion of up to 1 wt.%; and
silicon in a proportion of up to 1 wt.%; and
wherein the additive material includes nickel in a residual proportion such that a sum of the portions yields 100 wt.%.

40. (Withdrawn) The multi-component soldering system according to claim 37, wherein the additive material is nickel-based and includes, in addition to nickel, at least one of the following elements:

chromium in a proportion of 13.7 to 14.3 wt.%;
cobalt in a proportion of 9 to 10 wt.%;
tungsten in a proportion of 3.7 to 4.3 wt.%;
molybdenum in a proportion of 3.7 to 4.3 wt.%;
aluminum in a proportion of 2.8 to 3.2 wt.%;
titanium in a proportion of 4.8 to 5.2 wt.%;
carbon in a proportion of 0.15 to 0.19 wt.%;
zirconium in a proportion of 0.03 to 0.1 wt.%; and
boron in a proportion of 0.01 to 0.02 wt.%; and
wherein the additive material includes nickel in a residual proportion such that a sum of the portions yields 100 wt.%.

41. (Withdrawn) A method, comprising:
repairing a component of a gas turbine of one of (a) an aircraft engine and (b) a stationary gas turbine with a multi-component soldering system, the multi-component soldering system including:

a solder alloy based on nickel, the solder alloy including:
at least the following elements: chromium, cobalt, molybdenum and nickel; and
a combination of palladium, boron, and yttrium configured to set a melting range of the solder alloy in a range of from about 1200°C to about 1260°C; and
at least one additive material, a melting range of the at least one additive material being above a melting point of the solder alloy

42. (Withdrawn) The method according to claim 41, wherein the component of the gas turbine includes a guide blade of the gas turbine.

43. (Withdrawn) A method for processing a workpiece, comprising:
soldering the workpiece with one of (a) a solder alloy and (b) a multi-component soldering system including the solder alloy, the solder alloy based on nickel and including:

at least the following elements: chromium, cobalt, molybdenum and nickel; and

a combination of palladium, boron, and yttrium configured to set a melting range of the solder alloy in a range of from about 1200°C to about 1260°C.

44. (Withdrawn) The method according to claim 43, wherein the processing includes at least one of (a) repairing and (b) manufacturing the workpiece.

45. (Withdrawn) The method according to claim 43, wherein the workpiece includes a guide blade of a gas turbine.

46. (Withdrawn) The method according to claim 43, wherein the soldering includes high-temperature diffusion soldering.

47. (Withdrawn) The method according to claim 46, wherein the high-temperature diffusion soldering includes:

heating under one of (a) a vacuum and (b) a protective gas to a temperature of 1200 to 1260°C with a subsequent holding time of 15 to 60 min;

cooling under one of (a) a vacuum and (b) a protective gas to a temperature of 1100 to 1140°C with a subsequent holding time of approximately 240 min; and

cooling under one of (a) a vacuum and (b) a protective gas to a temperature of 1080 to 1120°C with a subsequent holding time of approximately 60 min.

48. (Withdrawn) The method according to claim 46, wherein the high-temperature diffusion soldering is followed by a heat treatment including heating

under one of (a) a vacuum and (b) a protective gas to a temperature of 1065 to 1093°C with a subsequent holding time of approximately 240 min.

49. (Withdrawn) The method according to claim 48, wherein the heat treatment is performed during a coating process.

50. (Withdrawn) The method according to claim 46, wherein the high-temperature diffusion soldering is followed by a heat treatment including heating under one of (a) a vacuum, (b) a protective gas and (c) ambient atmosphere to a temperature of 871 to 927°C with a subsequent holding time of 60 to 960 min.

51. (Withdrawn) The method according to claim 50, wherein the heat treatment is performed during an aging process.

52. (Withdrawn) The method according to claim 35, wherein the solder alloy is the solder alloy according to claim 24.

53. (Withdrawn) The multi-component soldering system according to claim 37, wherein the solder alloy is the solder alloy according to claim 24.

54. (Withdrawn) The method according to claim 41, wherein the solder alloy is the solder alloy according to claim 24.

55. (Withdrawn) The method according to claim 43, wherein the solder alloy is the solder alloy according to claim 24.